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9 March 1960

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NEW YORK 17, N. Y.  
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# FOREWORD

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SELECTED EASTERN EUROPE SOCIOLOGICAL TRANSLATIONS

This series of reports contains full translations and/or extensive extracts of selected articles of sociological significance appearing in publications of Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, and Yugoslavia.

Since the inclusion of translations from any given area or source will necessarily depend upon their availability at the time of publication, no single report of this series should be considered as necessarily including all categories of information to be presented in this series.

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Yugoslavia

PRINCIPLES OF THE INSTRUCTIONAL PLAN AND PROGRAM

FOR THE SECONDARY SCHOOL IN YUGOSLAVIA

Savremena skola

Rudoljub Colakovic

/The Contemporary School/,

Nos. 5-6, May-June 1959, Belgrade,

Pages 197-223,

Croatian, per

CSO: 3267

On the basis of Article 388, Paragraph 1 of the General Law on the School System (Opst zakon a skolstvu Sluzbeni list /Official Gazette/, No 28, 1958), the Educational Council of Yugoslavia establishes the

PRINCIPLES OF THE INSTRUCTIONAL PLAN AND PROGRAM

FOR THE SECONDARY SCHOOL

I.

Place and Role of the Secondary School

The secondary school is an independent social training and educational institution founded on the principles of social administration.

As part of a unified school system, the secondary school also realizes the general goal of training and education in Yugoslavia which is contained in Article 3 of the General Law on the School System.

Within the school system the secondary school represents one of the various types of schools in which the youth, according to their inclinations and capabilities, may continue the training and education acquired in the elementary school. The course of study in the secondary school lasts 4 years.

The secondary school is a school of general education. It offers a modern general education at a higher level and with a broader scope than that which the elementary school provides. Such an education is necessary of the purpose of training specialists in specific fields of the economic and social life of the country and for the sake of the development of specific branches of the science and of the national culture in general. This higher level and broader scope of modern general education assures the pupils of the acquisition of specific

practical knowledge which offers to the youth a sufficient general foundation for a number of professions in economic and social life. One of the social tasks of the secondary school is to render assistance in further education to those who have not completed the regular school. For this purpose, the secondary school will organize courses and various forms of work and purpose of being to have the largest possible number of people from production acquire a solid general education.

From such a social role of the secondary school there are also derived its specific training and educational functions and the content and organization of training and teaching work.

## II.

### Training and Educational Functions

The secondary school realizes the general goal of training and education which, according to the General Law on the School System is:

to enable the young generation through its work based on the modern accomplishments of science and technicology to contribute to the steady development of social production forces, to the strengthening of socialist social relations, to the growth of the material well-being and to the cultural flowering of the social community as a whole, and to the personal well-being and advancement of the working man;

to offer the bases of a scientific view of the world, to develop the awareness of the young generation of the creative power of the human mind and of the material activity in learning about and changing nature and society, in the creation of material well-being, culture, and civilization, and in the building of socialist social relations;

to acquaint the young generation with the history and achievements of the Yugoslav peoples and of all humanity in various fields of scientific, technological, cultural, and artistic creativity, and to enable it to acquire a broad general and specialized education;

to contribute to the building of all aspects of the human personality and of an independent and critical spirit with the intellectual character, moral, and work traits of a citizen of a socialist society;

to train the young generation in the spirit of brotherhood, unity, and equality of rights of the peoples of Yugoslavia, of loyalty to its socialist homeland and readiness to defend its independence, in the spirit of all-round and equal cooperation and mutual assistance among peoples in the interest of peace and advancement in the world, and in the spirit of the international solidarity of the working people;

to develop among the youth an awareness of social responsibility and the need to actively participate in social life and social self-administration;

to contribute to the physical training of the youth in the interest of raising the capacity for work and of a healthy personal life.

For the purpose of realizing the general goal of training and education in Yugoslavia, the secondary school has, in particular, the following training and educational functions:

to broaden and deepen the general education of the pupils in the scope and quality which correspond to their growth;

to offer to the pupils a specific fund of knowledge on which rest the modern accomplishments of science, technology, and civilization, in general, and of our national culture, in particular;

to enable the pupils to grasp the objective laws which govern in the development of nature and society and thus to build their view of the world;

to introduce the pupils to the principles of scientific methods of work and to develop in them intellectual curiosity and a taste for the practical application of acquired knowledge;

\* to develop in the pupils capabilities for the manipulation of modern technological means of production through participation in productive labor and to acquaint them with the fundamental principles of its production organization as well as to develop in them personal habits of work and a sense of responsibility in work; to contribute to the removal of the chasm between intellectual and physical work;

to acquaint the pupils with the most important contemporary socio-political problems in the world and especially with the problems of the entry of our social community into socialism; to develop among the pupils an awareness of the need for participation in various forms of social administration in the school and to introduce them to achieve participation in the life of their communal society and of the social community as a whole so that they might offer their personal contribution to its comprehensive development;

to develop the bodily health of the pupils and to cultivate a lasting interest and need for their active participation in all forms of physical culture;

to develop and enrich the emotional life of the pupils and cultivate their aesthetic sense on the basis of experiencing and understanding artistic works;

to further develop habits of hygiene among the pupils; and through its entire training and educational activity to comprehensively develop the personality of the pupils according to the ethical principles characteristic of socialist social relations in our country.

The secondary school realizes its training and educational functions in the specific instructional and training contents of modern general education which include the following components:

Investigation into the structure of society and the laws of social development;

Investigation into nature and its laws,

Acquaintance with and application of technology and participation in productive work,

Study of the native language and foreign languages,

Acquaintance with artistic creations, and

The nurture of physical culture.

### III.

#### The Structure of Training and Educational Work

The organization of training and educational work of the secondary school derives from its social role and its training and educational functions.

The training and educational activity of the secondary school consists in instruction, productive work, practical courses, and spare-time activities.

#### Instruction

There are two courses of instruction in the secondary school: the social-linguistic courses and the natural-mathematical course.

In the first class, instruction for all pupils is given according to the same instructional plan and program, and it differs according to courses of instruction beginning with class II.

The division into courses of instruction has the purpose of making it possible for the pupils to expand and deepen their knowledge in the fields which they have selected which is also intended to serve as a more direct preparation for further schooling and improvement.

In the further development of secondary school and according to social expediency, other appropriate courses of study may also be established.

In certain secondary schools (the classical secondary school - classical course of studies) instruction is based on the plan and program for the social-linguistic course of studies with the provision that the classical languages, Greek and Latin, are taught and that the program is directed toward a broader acquaintance of the pupils with classical culture, this being understood to mean the special inheritance which has had an influence on the development of the culture of the Yugoslav peoples.

The secondary school may be organized on the same principles with reference to the course of studies in oriental languages.

The secondary school may also be organized as a school of adult education.

#### Productive Work

Productive work represents a significant component in the training and education of the pupils in the secondary school in all classes and all courses of study. For this reason, the secondary school organizes various forms of direct participation in productive work for the purpose of nurturing the culture of work of the pupils and the development of their awareness of the social value and mutual bond between all forms of human labor, intellectual and physical. In this work, the pupils are acquainted with the basic technological processes and the technology applied in various branches of production and with the technological and economic principles and organization of social production and its significance.

The inclusion of the pupils in the productive work of the enterprises is coordinated with the instructional and training tasks of the school. The work process is based on the application of knowledge of the principles of the sciences (above all, of the natural sciences) and of technical education and is conducted on the basis of examples of concrete production according to the conditions and possibilities of the community.



## Practical Courses

Practical courses have the purpose of enabling the pupils to perform specific tasks in the economy and in various social services. The secondary school organizes those practical courses which correspond most suitably to general and local economic and social needs.

In order to give the pupils time to first broaden their general education, the practical courses, as a rule, are organized in the final classes of the secondary school. Practical courses are optional.

## Spare-Time Activities of the Pupils

The spare-time activities of the pupils play an especially significant role. They will best satisfy the great diversity of interest of the pupils in individual problems in the fields of science and technology as well as economic, socio-political and culture life, and sports, develop the pupils' own initiative in the creation of youth organizations in the school, and make possible their participation in local social life.

The supporters of spare-time activities are the pupils themselves, but the teachers and school organs exercise concern for these activities and offer organizational, professional, and material assistance to the pupils, taking into account the coordination of these activities with other forms of training and instructional work in the school.

The directing work in spare-time activities and solving problems which arise, by working in the class unit, and by cooperating in the work of the school council the pupils will gradually become capable of participating in social administration in general.

## IV.

### The Secondary School and the Community

Through its entire organization of training and instructional work the secondary school is connected in every respect with its local social community. It introduces the pupils in the organization of the life and work of the community, to its economic, political, and cultural activity, and from this source it draws the elements needed for connecting the education of the pupils with life and for developing the awareness of the pupils of membership in the social community and of the civic duties which this membership entails. The secondary school through its forces, the pupils and teachers, collectively and individually, participates concretely in various activities of the communal society in its socio-political and cultural manifestations, and thus makes a direct contribution to its developments.

In connecting itself with its local social community, the secondary school develops close cooperation with its organs of social administration, economic and cultural institutions, social organizations, the parents of the pupils, and pupils of other schools in the community.

In order that the pupils might grasp the essence of all forms of the democratic social order of our country and the prospects for its socialist development, and in order that they might be prepared for active participation in the organs of social administration, the secondary school, in accordance with these principles, organizes a pupils' collective, develops various forms of its self-administration, and gives it a specific place in the system of social administration of the school.

The internal life and work of the school and the relations of the pupils and teachers as well as the relations among the school organs are based on the harmonious activity of all school and social workers and on mutual respect for their rights and duties for the purpose of creating a healthy training atmosphere and a solid organization of instructional and training work.

## V.

### Supervision of the Development and Evaluation of Pupils

The supervision of the development of the pupils and the testing and evaluation of their progress and the results of work in general, forms an important and inseparable component of the instructional and training work of the secondary school.

The system of supervising the development of and the evaluating of pupils and the system of examinations serve to evaluate the success of individual pupils and to evaluate the accomplishments of instructional and training work, in general.

The supervision and evaluation of the development of the pupil should encompass his entire activity. In addition to his knowledge, it is necessary to supervise and take into account the application of the pupil, his work habits, independence and discipline in work, skill in applying acquired knowledge, and the basic character traits of the pupil.

In order that all of these elements might be included methods and means are needed which are richer and more diversified than those heretofore used. Through these methods and means the school should arrive at all of the facts concerning the direction and rate of development of the pupil in order that, on the basis of them and in the course of the work, it might offer to him adequate assistance and spur the development of his positive powers and inclinations and in order that it might be able to give a well-founded final grade.

The purpose of evaluation is to show the pupil to what extent the results of his work satisfy specific requirements, to inspire him to greater application to his work, and to guide his education in that direction in which, in accordance with his capabilities and inclinations, he will be able to achieve the best results.

The success of the pupil in mastering and assimilating instructional material is expressed in written and numerical grades.

#### Examinations

Examinations in the secondary school may be:

re-examinations in subjects in which the pupils do not show satisfactory success in the course of the school year,

examinations in individual or all subjects of one class in which pupils, for a justified reason, have remained ungraded at the end of the school year,

examinations which are taken by special pupils,

supplementary examinations upon transfer from other schools to the secondary school, and

the final examination at the end of the course of the study in the secondary school.

All examinations, with the exception of the final examination, are taken according to the instructional plan and program of a specific class.

The final examination is taken at the end of the course of study by all pupils who successfully complete class IV of the secondary school. The purpose of the examination is the verification of the final results of their education. In it, the candidates must show that they are in possession of knowledge and are capable of making use of it in achieving that level which is defined as the final goal of education in the secondary school.

The final examination consists of homework which the pupil does in the course of the final year, of written work in the native language done before an examination commission, and of an oral examination. The themes or assignments for homework are taken from the basic fields of instruction of the corresponding courses of study.

As an assignment, the pupil may complete some technical work, a sketch, model, or preparation and the like which also must be described in writing. Broader themes from social life, science, and culture are given for the written work in the native language before the examination commission. In the oral examination, the candidate explains his homework and answers questions of members of the commission concerning it.

## VI.

### Organizational Structure of the Secondary School

The forms through which training and education in the secondary school are realized are:

1. Instruction
2. Productive work
3. Spare-time activities
4. Optional practical courses.

In the elective courses of study from classes II to IV the instructional plan of subjects is adapted to the training and educational goals of the socio-linguistic or the natural-mathematics course of study.

In the social-linguistic course history is emphasized with the principles of sociology, and political economy, and philosophy and, to a greater extent, Yugoslav literature, art, and foreign languages are studied.

In the natural-mathematics course of study, attention is devoted particularly to mathematics and physics as the basic disciplines for the study of the natural sciences.

To the extent that in some secondary schools, especially the smaller ones, instruction cannot be successfully organized with two varied programs - for the social-linguistic and natural-mathematics courses - common general instruction may be organized for all pupils

regardless of which course of study they have decided upon, with the provision that appropriate elective instruction will be especially conducted for the individual courses.

## VII.

### WORK PLAN OF THE SCHOOL

#### Instructional Plan

#### I. Social-Linguistic Course of Study

	<u>I.</u>	<u>II.</u>	<u>III.</u>	<u>IV.</u>
Native languages and literature	X	X	X	X
A.				
History	X	X	X	X
Sociology with the principles of political economy	--	--	X	X
Social order of Yugoslavia	X	X	--	--
Logic and psychology	--	--	--	X
Art	X	X	X	X
Foreign language*	X	X	X	X
Latin	<u>X</u>	<u>X</u>	<u>--</u>	<u>--</u>
	16	15	16	20
B.				
Geography	X	X	--	X
Biology	X	X	X	--
Chemistry	--	X	X	--
Physics	X	X	X	--
Mathematics	X	X	X	X
Technical instruction	X	X	X	X
Premilitary training	<u>--</u>	<u>--</u>	<u>X</u>	<u>X</u>
	12	13	12	8

Total	28	28	28	28
Physical education	X	X	X	X
Total	31	31	31	31

## II. Natural-Mathematics Course of Study

	Classes			
	<u>I.</u>	<u>II.</u>	<u>III.</u>	<u>IV.</u>
Native language and literature	X	X	X	X
A.				
Mathematics	X	X	X	X
Physics	X	X	X	X
Chemistry	--	X	X	X
Biology	X	X	X	X
Descriptive geometry	--	X	X	X
Technical instruction	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
	13	17	19	19
B.				
Geography	X	X	X	X
History	X	X	X	--
Sociology with the principles of political economy	--	--	--	X
Social order of Yugoslavia	X	X	--	--
Logic and psychology	--	--	X	--
Philosophy	--	--	--	X
Art	X	X	--	--

Foreign language*	X	X	X	X
Latin	X	X	--	--
Premilitary training	--	--	X	X
	<u>15</u>	<u>11</u>	<u>9</u>	<u>9</u>
Total	28	28	28	28
Physical education	X	X	X	X
Total	31	31	31	31

\*The school should also make possible the optional study of still another foreign language for pupils who desire it.

#### Productive Work

Productive work is carried out in the course of training in the secondary school so that its duration amounts to at least 15 days in every school year.

In carrying out this task through the cooperation of the school, the community, and economic organizations, various forms of organization and participation of the pupils in productive work are used.

#### Spare-Time Activities

Classes	I.	II.	III.	IV.
Spare-time activities	X	X	X	X

#### Practical Courses

In the course of training, as a rule, in the final classes, practical courses may be organized for pupils who desire them.

The school organizes practical courses in accordance with the interests of the pupils and the needs of the environment and in harmony with the school's possibilities.

## General Education Courses for Adults

The school will organize various types of general education courses for adults who desire to supplement or continue their education.

## VIII.

### PRINCIPLES OF THE INSTRUCTIONAL PROGRAM

The principles of the instructional program are given as a whole as a framework and orientation on the basis of which the republic councils of education will prepare instructional programs for the two courses of study.

## Native Language and Literature

The task of instruction in the native language and literature is:

- to acquaint the pupils with the wealth and beauty of the literary language so that they master its laws and possibilities of expression and thus develop and refine their own oral and written expression,

- on the basis of an analysis of the artistic character and content of literary works, for the pupils to understand their social origin and artistic value;

- to acquaint the pupils with the development of the literature of our peoples and with the more significant works and for them to understand the ideas which permeate these works; and

- to acquaint the pupils with the most important works of world literature and their general cultural and social significance.

### Principles of the Program

For the fulfillment of these educational and training tasks, provision is made for the significant works of the literary heritage and of the contemporary literature of all of our peoples and for the most important works of foreign literature which are included in the general treasury of culture. In connection with this, use must also be made of the essential content of the history of the literature of our peoples along with the theory of literature and style and with the grammar of the contemporary literary language.



The elements of the history of literature of our peoples along with the theory of literature should contribute to the elevation of general culture, to aesthetic and moral training, and the style and grammar of the modern language should contribute to elevating the culture of oral and written expression. The native language and literature as a whole should assist in the assimilation of general culture and in the further development of the national culture.

A part of the instruction in the native language and literature should be devoted to introducing the pupils to literature as art through the elaboration of themes which give an historical explanation of the development of literature. In selected examples of native and foreign literature and epic and contemporary lyric poetry, the pupils should grasp the essential and aesthetic character of a literary work, its social role, idea, theme, forms, and expression along with bits of information concerning the author insofar as the character of the work requires this. The development of the history of the literature of the Yugoslav peoples should be provided for in the appropriate classes. In this connection, the most important writers of the Yugoslav peoples whose works represent the best and most characteristic artistic accomplishments of our individual peoples.

The monographic treatment of a writer should contain the most important events in the life of the writer which are closely connected with his literary work, a short review of his important achievements, and analysis of one of the most important works. Positive experience and practice thus far have shown the value of a gradual introduction of pupils to scientific literature, criticism, the essay, periodicals, newspapers, and other specialized literature suited to their stage of growth. Modern literature, both ours and foreign literature, should be represented in all four classes in order to satisfy the principle of contemporaneity and to interest the pupils in modern literature.

Special attention should be devoted to the cultivation of oral and written expression in such a way that, in addition to an analysis of the style and language of an artistic work, provision is also made for the necessary principles of style (from the means and characteristics of expression of words and sentences to style as a whole) as a means for the conscious and active assimilation of the laws and possibilities for expression which lie in the literary language.

A better acquaintance with the linguistic laws of the native language will also contribute to success in the study of foreign languages.

Pupils should be accustomed to making independent use of specialized literature on style and orthography.

## History

The function of the instruction in history is:

to acquaint the pupils with the most important historical events and phenomena, with their cause and mutual conditionality, with the development of the productive forces of society and their influence on the development of the economic, political, social and cultural life of mankind, in order in a specific number of the most essential events and phenomena to enable the pupils to grasp the laws of development of human society;

in addition to acquainting [them] with the creative forces in various stages of development, to acquaint the pupils also with the role of personalities in history;

to develop in the pupils a belief in the historical necessity and justification for revolutionary phenomena at specific levels of the development of society;

to enable the pupils, on the basis of research and study of historical phenomena, to independently understand contemporary events and the inevitability of socialism.

## Principles of the Program

The program of history for the secondary school enables the pupils to understand history as one of the social sciences, and acquaints them in essential outlines with the various stages through which human society has passed in its development as well as with the laws of this development. In this way the pupils should obtain a clear conception of the line of development of primitive society and should grasp in the most essential material the basic characteristics of the prominent and advanced states of the Ancient East, Greece and Rome.

The pupils should be acquainted with feudalism and its characteristics according to the example of our lands and of the most developed states in Europe and Asia. They should be acquainted with the basic forms and the method of production, the way of life, the level of culture, class antagonisms, and the essence of exploitation. In the program, feudalism is to be divided into its various stages: early, developed, and late feudalism, including in early feudalism the Great Migration of Peoples, the ancient Slavs, changes in Western Europe after the Migration of Peoples, the development of Byzantium, the origin of the Russian state, the Arabs, and our peoples in the early feudalistic period.

In the treatment of advanced and late feudalism, the introductory part should contain the basic characteristics of the development of productive forces and of production relations (the transition from a barter to a goods-monetary economy, original accumulation in Western Europe, etc.). In this period, reference will be made to the significance of the appearance of cities for political and social development of individual countries, to the role of the church, the phenomenon and place of citizenship, and to class conflicts in connection with the mass peasant uprisings. Provision is also to be made for a comparison of feudal society in the West with feudalism in our lands with reference to specific characteristics of the development of the Yugoslav states in the Middle Ages. Of the most important phenomena, special attention will be given to geographical discoveries, Humanism, the Renaissance, and the Reformation. The study of recent phenomena in the political economy which are connected with original accumulation and capitalism is to be included in the program and to be coordinated with instruction in sociology and political economy.

In the program, a sufficient place is to be given to the study of the Yugoslav states of the Middle Ages both in the period of their rise and in their backwardness in relation to the European peoples as a result of being subjugated to foreign rule. The lack of uniformity in the development of late feudalism should be especially emphasized in the program.

The treatment of capitalistic society is to include the industrial revolution in England and the operation of a colonial empire, the formation of the United States of America, the French bourgeois revolution, its significance and consequences, the industrial revolution on the Continent, national movements, the appearance and development of the working class, utopian and scientific socialism, revolutionary movements in Europe in 1848, the unification of Germany and Italy, the First International, and the Paris Commune. In the period of imperialism, its fundamental characteristics, the lack of uniformity of economic development and colonialism, the founding and activity of the Second International, and the expansion of the great powers in the Far East are to be treated. The history of the peoples of the East is to be explained to the greatest extent possible.

In the treatment of the history of the peoples of Yugoslavia, a special place is to be given to the revolutionary struggle and to mutual cooperation for the attainment of political, national, and cultural independence. As in the earlier periods, here also the peculiar nature of the development of our peoples is to be emphasized.

In the final class [class IV], the history of the First World War to the present is to be given. The program is to especially emphasize, on the one hand, the phenomenon of socialist revolutions, and on the other, the changes and phenomena in some capitalist countries (fascism in Italy and national socialism in Germany). Provision is likewise to be made for the study of basic antagonisms among the great powers in the period between the two wars.

The most important events and phenomena in the former Yugoslavia are to be treated with special reference to the development of the workers' movement and the role of the Communist Party of Yugoslavia. A special place is to be given to the National Liberation War, to the significance of our Revolution, in the complex of international events during the Second World War, and to the building of socialism in Yugoslavia. Finally, the basic tendencies in the development of the contemporary world should also be included.

#### **Sociology with the Principles of Political Economy**

The task of instruction in this subject is:  
to broaden and shape the knowledge of pupils in the field of the social sciences with material given on a theoretical level and to prepare the pupils in the social-linguistic course of study for further studies of social problems to these two scientific fields.

#### **Introduction**

A historical review of the development of social theories. Marx's and Engels' teaching concerning society. The subject of sociology. The relationship between sociology and special social sciences. Historical materialism as a general theory and method of Marxist sociology.

#### **Basic Elements of Sociology**

The phenomenon of society. Society is the sum total of relationships in which people find themselves both regard to nature and among themselves. The peculiar nature of society.

Nature and society. The natural conditions of social life of human beings. Man's adaptation to nature and the adaptation of nature to man.

Human labor and its characteristics.

The concept of the phenomenon of society. Types of social phenomena: social processes, social relations, and social creations.

The base and superstructure of society. Economic conditions as the primary conditions of the life of humans in society. Productive forces and production relations and their mutual relationship. The method of production. The movement of population.

The social superstructure - the classless and the class society. The legal-political superstructure. Property. The social consciousness (culture) and its main forms (science, philosophy, art, religion, social regulations - law, morality, and customs).

Types of social communities. The clan and tribe. People and nation. Social state and social strata. Classes and their struggle. The family. The settlement.

Social institutions and organizations. The state as an institution of brute force in the hands of the ruling class. The state and law. Parties as political organizations. Other forms of social institutions and organizations (specialized professional organizations, trade unions, international organizations, the church, etc.).

The movement of society. The relationship of the base and the superstructure. The development of production. Evolution and revolution.

## Principles of Political Economy

The function of this subject is to offer basic, elementary knowledge in the field of the economy and of the economic development of our country as well as to broaden their [the pupils'] knowledge of the field of the social sciences.

### Social Production as the Unity of Production, Distribution, Exchange, and Consumption

Production - Production as a condition of the existence of human society. Factors in production: labor, the tools of labor, and the objects of labor. Productive and unproductive labor. Necessary labor and the surplus of labor. The relationship of the labor force to the means of production - in capitalism and in socialism. The concept of reproduction and its significance.

Distribution - the basic characteristics of distribution in capitalism; rent and product (surplus value). The sources of personal income in capitalism. Distribution under socialism: the fund for personal income under socialism. Compensation according to labor as

the criterion for the distribution of the fund for personal consumption under socialism. Common consumption as a corrective in the application of the principle of compensation according to labor (the school system, etc.). Income of the unproductive population under socialism.

Exchange - The historical conditionality of exchange. The natural and the goods economy. Products of human labor as goods. Use value and value. The development of forms of value. The origin and essence of money. Money as a means of expressing value. Price as a form of the value of goods. The influence of supply and demand on the movement of prices.

Consumption - Production consumption and personal consumption. Factors on which depend the volume and structure of personal consumption (personal income, the level and structure of prices, and historical, cultural, and other factors). Individual and common consumption. The living standard.

#### The Necessity for A Transition Period from Capitalism to Communism

The economic conditionality and prerequisites of the socialist method of production. Socio-political prerequisites of the socialist method of production. The conditionality of the paths and methods for the building of socialism.

#### The Economic Structure of Yugoslavia

The basic characteristics of the economy of our country until the Second World War. The creation of socialist property and the organization of a socialist economy. The policy of industrialization and change in the economic structure of our country. The socialist transformation of agriculture. The tasks of current economic policy.

Administration in the economy of Yugoslavia. The necessity for administrative direction of the economy and its basic characteristics. Social administration and worker self-administration as the expression of the objective necessity for socialist development. The organs of administration in the economy. Planned regulation and direction of economic movement and development. The position of economic organizations and their operational independence. The material incentive of the immediate producers as a motivator of their activity.

#### The State and Social Order of Yugoslavia

The function of instruction in this subject is:

to contribute to the socio-political consciousness of the pupils.

for the pupils to acquire a complete and clear conception of the organization of the socialist state and social order of Yugoslavia and to grasp their political essence,

to acquaint the pupils with the principles of socialist social relations as well as with the basic obligations and rights of citizens of Yugoslavia.

In the program material for this subject, attention should be given primarily to its training substance. In connection with this, it is necessary also to develop a suitable pedagogical and methodical approach directed toward building the socio-political awareness of the pupils. This will require the use of vital examples of the movement of our socio-political life to constantly dramatize the program material in the process of instruction. In the beginning classes of the secondary school the pupils should first of all systematize, expand, and deepen the knowledge of our state and social order which they have already acquired in the elementary school.

Instruction in this subject makes it possible for the pupils to be in the stream of our social reality at a time when they are not enabled to do this by other subjects such as history and geography because of the structure of their material in these classes. In this way, the pupils will be introduced to the essence of our state and social order precisely at the time when their views and convictions are beginning to be formed and when the pupil is already being more decidedly shaped as a person and citizen.

### Logic and Psychology

The function of the instruction in psychology is:

to acquaint the pupils with the laws and forms of correct thinking,

to develop in the pupils an understanding of the importance of logic for scientific thinking in general,

to transmit to the pupils a knowledge of psychic phenomena and, especially, of the higher manifestations of psychic life which, for man as a conscious social being, are of the highest importance, and

to acquaint the pupils with the theoretical and practical significance of psychology.

The program for psychology encompasses the subject, methods, and branches of psychology, the physiological bases of psychic life, psychic functions, and the bases of the psychology of personality and of human activity.

The program for logic encompasses the subject and function of logic, its relation to psychology, gnoseology, and ontology, logical thinking with its forms and principles, the relationship between formal logic and dialectics, and methodology.

Psychology and logic should be treated as special scientific disciplines, but it should also be taken into account that within the scope of this instruction they form the introduction to a survey of the historical development of philosophic thought in general.

### Philosophy

The function of instruction in philosophy is:

to acquaint the pupils with the main stages in the development of philosophic thought as well as with the basic problems of contemporary philosophy, giving special attention to the origin and development of Marxist thought,

to contribute to the correct ideological orientation of the pupils and to the formation of a scientific view of the world.

The program for philosophy should encompass the subject and function of philosophy, the relation of philosophy to the natural and social sciences, and a general survey of the development of philosophic thought, giving special attention to dialectical and historical materialism and to the most important problems and trends in contemporary philosophic thought.

In the exposition of the historical development of philosophic thought the pupils should, first of all, be acquainted with the relationship between being (matter) and thought as a basic philosophic problem and then with the most important philosophic teachings in the epochs of slave-holding and feudalistic societies as well as with the teachings of oriental philosophers. The same approach should also be taken to the philosophic thought of bourgeois society with the provision that, in view of its greater historical proximity, somewhat more time be devoted to it, and with the provision that a survey be given of some important names (Bacon, Locke, Descartes, Spinoza, Kant, Hegel).

All of this material should be summarized so that more instruction time can be devoted to dialectical materialism in view of its importance as well as to certain trends in contemporary thought.

Historical materialism as a general theory of social development should assume a special place in instruction in philosophy.



## The Bases of the Plastic and Musical Arts

### A. The Plastic Arts

The function of instruction in the plastic arts is:

to provide the pupils with the necessary bases for understanding and experiencing the plastic arts, and

to develop in the pupils an interest in and love of the plastic arts.

In carrying out the program, the plan for the plastic and musical arts should gravitate as much as possible to the development of sensitivity to art, but the greatest scope should be given to the history and ideas of specific epochs.

A part of the material from the field of plastic art should primarily enrich the pupil's power to recognize various styles and the connection which exists among architecture, sculpture, and painting, and the other part should enable him to understand the essence of the range of problems concerning art especially by means of a comparison of the differences in artistic content.

In the program, emphasis should not be on the history of styles, but rather the pupils should primarily be acquainted with architecture and painting and their means of expression. Emphasis on the work should be on aesthetic analysis. The framework of the program should encompass a limited number of authors and their work, an aesthetic analysis of which would be made more by the emphasis on the perusal of means of expression and less by burdening [the pupils] with historical, biographical, and special data. As the possibilities permit, use should also be made of various forms of painting activity of the pupils themselves.

### B. Musical Art

The function of musical education is:

to provide the pupils with the necessary bases for understanding and experiencing music, and

to develop among the pupils an interest in and love for music.

This achieved by listening to and becoming acquainted with characteristic and important musical works, as well as with the forms and means of expression which correspond to individual stages in the development of music as a whole and of its individual types: folk music and light and serious music.

Instruction in all classes should always start with listening to selected, important artistic works of native and foreign music. These examples should be characteristic of individual periods of musical creativity or of composers. Biographical data and data concerning the principal work of individual composers should be given only in briefest outline.

In musical instruction everything should be eliminated which would lead to the verbal assimilation of facts, to the teaching of unnecessary biographic details, to dry theoretizing, and the like.

Musical education should be based on the practical and theoretical knowledge of the pupils acquired in the elementary school. On this basis, the musical education of the pupils should be further broadened, but only to the extent which is necessary to achieve the basic goal which is the deepest possible understanding and experiencing of musical works and the cultivation of musical taste. In this connection, consideration should also be given to the dispositions and inclinations of the pupils, making use of all forms of musical activity of the pupils themselves where conditions exist for them.

#### Foreign Languages

The function of instruction in foreign languages is:

for the pupil to master the spoken language so that he can actively participate in conversation concerning every-day life.

for the pupil to be in a position to follow a simple exposition in a foreign language of a subject of general interest (from the press, over the radio, in films, and the like).

for the pupil to have a proper pronunciation and intonation,

for the pupil to be in a position to correctly and accurately read an unfamiliar text,

for the pupil to be able to understand the sense of a suitable, unfamiliar text and, with the help of a dictionary, to translate it accurately and in the spirit of his mother tongue,

for the pupil to be able to understand a comparatively easy, suitable text which has been read to him and to conduct a conversation concerning it.

for the pupil to actively master the basic forms necessary for oral expression and to be acquainted with the forms of all types of words and with the chief peculiarities of syntax of the foreign language which he is studying,

for the pupil to be capable of written expression within the limits of the mastered spoken language or on the basis of a prepared text, and

for the pupil to know in general outline the most important facts in the literature and culture of the people whose language he is studying and to have knowledge of contemporary events in that country.

In the secondary school the pupils continue the study of that foreign language which they studied in the elementary school, but since they come from various schools, often with great differences in the extent and quality of knowledge, it is essential that the program of the fifth year of study of a foreign language assure the equalization of the knowledge, it is essential that the program of the fifth year of study of a foreign language assure the equalization of the knowledge of the pupils. In that class [presumably, class I of the secondary school] the material of the elementary school should be consolidated and possible gaps [in knowledge] with which the pupils have come from the elementary school should be filled.

Therefore, the program should provide for:

perfecting the pronunciation and intonation of a sentence in speaking and reading,

consolidating the lexical and grammatical material covered in the elementary school through the constant use and application of already acquired speaking habits for the purpose of their further development, and

expanding lexical and morphological material.

In succeeding years, it is necessary to further consolidate and expand vocabulary and to introduce the pupils to specific possibilities of expression in the language which they are studying: idioms and phrases essential for understanding the spoken and written language and for simpler independent oral expression.

Provision should also be made for easier original texts which gradually introduce the pupils to the way of life, civilization, and culture of the people whose language they are studying, and, in addition, provision should be made for a certain number of texts containing situations from daily life.

Attention is also to be devoted to the cultivation of the spoken language for the purpose of consolidating the basic knowledge which the pupil should actively apply in specific situations and conversations with themes from prepared texts, from the life of the pupil, and from contemporary events in the world and in Yugoslavia.

In the preparation of texts, provision is also to be made for good translation.

In the final classes, there is a transition to the consolidation and final treatment of morphology within the limits of the need of the secondary school as well as to an expanded treatment of syntax for the purpose of entering more deeply into the spirit of the foreign language and of refining habits of speaking.

In the last year of study, the preparation of texts is to be connected with giving instructions and creating habits for the independent use of literature.

#### The Latin Language

The function of instruction in the Latin language is:

for the pupils to master the basic vocabulary and the basic grammar of the Latin language to the extent that they can correctly read and, with the help of a dictionary, understand a comparatively simple prose text,

for the pupils to be able to correctly read and understand Latin terminology and simpler quotations in literary, specialized, and scientific works, and

for the pupils, through an acquaintance with the fundamentals of Latin grammar, to consolidate and expand their knowledge of the native language and of the foreign language which they are studying.

The lexical and grammatical material should be treated in sentences comparatively short texts in which there should be sufficient opportunities for the teaching and assimilation of this material. Along with texts and sentences with the theme of the social and cultural life of antiquity, texts should also be given which relate to the past of our peoples and their ties and contacts with Rome.

In the first part of the program, along with the mastery of the orthography and of the pronunciation of the Latin language adopted by us, primarily, the principles of morphology should be treated. In the second part, some peculiarities in the field of morphology and, then, the principles of syntax should be treated.

In view of the growth of the pupils, it is necessary to develop among them, first of all, the capacity for thought, making comparisons, and drawing conclusions. The demands for learning by the memorization of rules should be limited to the minimum extent necessary.

The method of making comparisons with the mother tongue should be applied whenever a favorable occasion for this presents itself.

## Geography

The function of instruction in geography is:

- to present to the pupils the basic phenomena of the universe, the laws which govern in it, and the immensity of movement and development in nature,

- to acquaint the pupils with the earth as a celestial body, its movements, and their causes and consequences,

- to acquaint the pupils with changes in the earth's crust, with the causes and consequences of these changes, and their mutual connection,

- to instruct the pupils in the mutual connection between the organic and the inorganic world, the mutual relationships between nature and man, and the struggle of humans against nature for the purpose of making use of the natural wealth of individual regions and countries,

- to acquaint the pupils with the basic phenomena of production, with the imbalance in economic development in the world, and with the unity of the world economy,

- to inform the pupils of the political and social order of individual countries, of the state of progress of their production, of the attitude of the imperialist powers toward the colonies and their population, as well as of the struggle of that population for national, political, and economic freedom,

- to acquaint the pupils with the natural and social conditions of production in our country and with the share of our country in world production, and

- to enable the pupils to correctly grasp and evaluate contemporary economic problems and political events in the world.

## Principles of the Program

Geography encompasses the fundamentals of general geography, the regional geography of the world, and the geography of Yugoslavia.

In the fundamentals of general geography, essential subject matter concerning the universe and its evolution is treated. Then, the following subjects are considered: the earth as a celestial body, the geological development of the earth's crust and the origin of the contemporary geographical relief, weather and climate, water on the earth, plant and animal life, and the economic significance of all of these factors.

The population of the earth. Present forms of human societies. The role of man in the transformation of the natural environment. Man as an economic factor. The economy, economic activities, and economic branches. The unity of the world economy.

In the regional geography of the world are treated the location, physical-geographic features and natural wealth, population, production, and regional division of individual continents. Natural features, social characteristics, and production of the more important states. World, economic, and political problems.

The treatment of the geography of Yugoslavia. Natural features and their economic significance. Population. Regional division. The economy of Yugoslavia. The position of Yugoslavia in the world.

In the treatment of the fundamentals of general geography, the pupils meet all three aspects of contemporary geography, - nature, man, and production - and are led to view nature as a field of human activity and a reservoir of many raw materials and a source of power, and man as a dynamic factor who is struggling to transform and produce. They are also led to recognize the influence of natural and geographic factors on man and the economy.

Anthropological geography is treated mainly as the geography of productive forces and production relations. Consequently, the program turns attention to the forms of contemporary human societies organized for the struggle with nature and for the satisfaction of social needs.

In economic geography, the geography of production is not limited to a description and analysis of individual economic branches and to a simple enumeration of their products, but rather, consideration is also given to natural, social, and economic conditions on the basis of which their diffusion in the world can be explained. It is recommended that the teacher along with the pupils prepare simple but clear, sketched economic maps of the world on which will be noted only a few of the most important products.

As has been emphasized in the explanation of the program, among the physical and geographic features, those should be selected which have a decisive role in the social and economic development of each continent, each region, and each individual country, while devoting chief attention to the social and economic conditions in each country included in the program, because only in this way will the pupils be able to understand the role of this country in the world economy.

The knowledge and experience of the pupils acquired in geography and in connection with the treatment of regional geography will serve to emphasize in the strongest possible way the significance of the position of our country and to treat in the most fundamental way possible its morphological character, climate, hydrography, and population. A solid treatment of natural and social factors and their reciprocal influence facilitates the treatment of the regions and economy of Yugoslavia.

Constant reference to the map, the preparation of graphs and diagrams, relatively short outings in the neighborhood, visits to industrial enterprises, and greater, carefully prepared excursions will help the instruction in geography to achieve the established goals and will accustom the pupils to apply and use in life the knowledge acquired.

## Biology

The function of the instruction in biology is:

- to explain to the pupils the origin of life on the basis of the results achieved by modern science,

- to contribute to the formation among the pupils of a dialectical-materialistic view of the world,

- to explain to the pupils the principles of the laws of organic evolution and the historical development of the biological sciences,

- to present to the pupils knowledge of structure and function, metabolism, development and procreation of living beings,

- to explain to the pupils the relation between the structure and function of living beings and their adaptation to the conditions of environment,

- to contribute to the maintenance and protection of the health of the pupils on the basis of knowledge from the field of science concerning man,

to point out to the pupils the protection of nature in connection with the use of nature, and

to point out to the pupils the significance and results of applied biology in practice and the influence of man in changing nature.

### Principles of the Program

The program for biology should encompass the basic content of general biology: morphology with classification, physiology, ecology, and organic evolution.

Therefore, the program of the secondary school should not be extended repetition of the material of the 8-year school, but rather a continuation of the study of those biologic disciplines which enter more deeply into the analysis and essence of living phenomena, for example: physiology, ecology, and organic evolution. Classification should not be taken as the basis of the program for biology, but rather it, among other disciplines, should assume an appropriate place. Therefore, the plan for the biologic disciplines should be made so the completeness and continuity are obtained in relation to general education in the elementary and secondary schools, which is very important.

In the introductory part, the subject of biology and the method [use] in biology should be explained. After that, the basic phenomena of nature as a whole and of the unity of inanimate and animate nature (ecological system) should be explained. Then, the concept of the individual, populations, and living societies, and the conditions and basic manifestations of life should be analyzed.

In the continuation of the program, cells of plant and animal organisms should be studied and a short survey should be given of the classification of plants and animals and the anatomy and physiology of the human organism.

The second part of the program should include the morphology, physiology, and ecology of plant and animal organisms with emphasis on the study of the metabolism of plants, animals, and man, as well as an analysis of the basic ecological laws in nature, in general. This part should include the influence of man in changing and using nature by connecting this also with practical work, as well as an acquaintance with agricultural production in the social environment. The protection of nature and of human health are also included in this part of the program.



The third part of the program should encompass the history of the natural sciences and organic evolution. In this part, the basic elements of the development of biological science as well as information concerning organic evolution through all socio-economic formations, should be given. In particular, the teaching of Darwin and the dialectical-materialistic conception of organic evolution with a review of the materialistic and idealistic explanation of inheritance in the organic world should be given.

#### Chemistry

The function of instruction in chemistry is:

for the pupils to assimilate specific knowledge of chemical facts and laws which are essential for a correct scientific understanding and interpretation of nature,

for the pupils to be introduced to the observation of natural phenomena and methods of verification of acquired knowledge,

through instruction in chemistry, for the pupils to acquire the capability to make use of methods of scientific thinking, and

for the pupils to comprehend the great importance of chemistry in the life of modern man and to become acquainted with the role and significance of chemistry in the most important processes of production.

Chemistry, as an experimental science, rests on tests, therefore the experiment is the basis of the study of chemistry. At this level of schooling, a significant role is played both by the mathematical formulation and explanation of appropriate phenomena as well as the use of chemical formulas and equations by means of which explanations of chemical processes may be demonstrated scientifically and rationally in a unified and specific way.

The program encompasses specific material from the general field of chemistry, from organic chemistry, and from applied chemistry.

In the program, great attention should be devoted to the general field of chemistry. In the treatment of organic chemistry it is necessary to make possible a coordination with biology. Through the study of applied chemistry, the pupil should understand what extent chemistry and its application have influenced general culture, and an interest should be developed in him for the methods and problems of production.

In order to facilitate education in general and inorganic chemistry an effort should be made, because of the difficulty of problems to treat general concepts and laws with the use of concrete examples. Therefore, in the beginning it is necessary to proceed to the study of several basic elements and compounds and immediately thereafter to turn to the study of the periodic system and the structure of the atom.

The law contained in the periodic system will make it easier for the pupils to understand the unity and structure of matter, and the structure of the atom will make it possible to give modern explanations for phenomena. Only on the basis of the structure of the atom will the pupil be able to understand the mechanism of the joining of atoms to the creation of molecules or chemical bonds. It is precisely these phenomena which form the essence of the chemical process.

The special treatment of applied chemistry has numerous advantages. The processes in the chemical industry are complex, and the pupils will be able to understand them only when he knows chemistry, and what is very important, he will also be able to comprehend the economic factor in industrial production. Certain problems which the chemical industry is studying are of great importance both for education and training. The knowledge of chemistry acquired in the study of the chemical industry finds an application and becomes concrete and useful, and the pupil understands it better and assimilates it more permanently.

Organic chemistry is to include an introduction to organic chemistry. Hydrocarbons. Hydroxyl derivatives of hydrocarbons and their oxidation products. Nitrocompounds and amines. Biologically important organic compounds. Some more important processes in the living organism.

Elements and compounds. Basic chemical laws. Halogens. Acids, bases, and salts. The periodic system of elements. The structure of atoms and molecules. Solutions. Electrolytes. Redox processes. Metals and alloys. The chemical industry (inorganic and organic). A short survey of the development of chemistry.

## Physics

The function of instruction in physics is:

to acquaint the pupils with the most important physical phenomena, their casual connections, and laws,

for the pupils to comprehend the significance of physics in modern life, especially, in technology and in the economy, and

to contribute to the development among the pupils of a dialectical-materialistic view of the world.

In order to carry out the aforementioned tasks, the instruction in physics should be organized so that in the course of instruction the pupil is acquainted with the basic methods of investigation of natural phenomena and the methods of scientific thinking, and so that he is enabled to properly apply the knowledge acquired in practice. This can be achieved by the application of active methods in instruction: making direct observations, laboratory training, discussion, comprehensive mathematical analysis of phenomena, the solutions of practical problems by making calculations or by carrying out technical projects.

### Elements of the Program

Measurement and measures

Motion (types of motion, speed, acceleration).

The fundamentals of dynamics (Energy and mass. Quantity of motion. Impulse. Work and force, energy, the law of the conservation of energy). Principles of statics (equilibrium and simple mechanisms).

Molecular movement. Molecular forces (elasticity, surface tension, osmosis). Heat (expansion of bodies, thermometry, the kinetic theory of gases). Thermal energy (quantity of heat, specific heat, the first principle of thermodynamics, thermal motors).

Curvilinear movement (uniform circular movement). Movement in a gravitational field. Rotational movement. Movement of liquids and gases.

Electricity. Principles of electrostatics (electrical fields, capacity, the role of dielectrics). Electrical current (strength of current, voltage, electrical resistance, Ohm's law, Kirchhoff's rules. Thermal effect of current. Chemical effect of current). Thermoelectric phenomena (thermo-elements).

Magnetism (magnetic field, the earth's magnetism). Electrical magnetism (magnetic field of current, electromagnetics, theory of magnetism). Electromagnetic induction. Electrical machines. Passing electricity through gases (cathode rays, electrons, thermoelectric emission).

Oscillations and waves (simple periodic movement, the pendulum, types of waves, Heigen's principle, reflection and break-up of waves, interference of waves, diffraction and polarization of waves).

Acoustics. Sound (interference and resonance). Doppler's principle.

Electromagnetic waves (electromagnetic oscillations, electromagnetic waves, radio, the cathode oscillograph, radar).

Basic laws of geometric optics. The speed of light. Interference of light. Polarization of light. Diffusion of light.

Roentgen rays.

Fundamentals of atomic physics. Natural radioactivity. Laws of the radiation of a black body. Planck's quantum theory. Photoelectric effect. Compton's effect. The dualistic nature of electromagnetic bodies. The electronic configuration of atoms. The composition of atomic nuclei. Nuclear reactions. Fission. Fusion. Bases of the theory of relativity.

## Mathematics

The function of instruction in mathematics is:

to present to the pupils a sufficient number of facts and to assure that they acquire mathematical culture,

to enable the pupils to apply the acquired knowledge of mathematics to the problems which are raised by technology, economics, and social life, and

to assist the development of logical thinking by the pupil and to develop a capacity for observation, broad concepts (concrete and abstract), a capacity for concentration, independence in work, and control of work.

## Elements of the Program

A survey of calculating operations using whole numbers.

The raising of numbers by a whole positive power. The division of polynomials into factors. Operation with algebraic fractions. The concept of a function. Linear function. Linear equations with one unknown and systems of linear equations with two unknowns. Simple unbalanced equations.

Points, lines, and planes and their reciprocal relations. The geometrical location of points. Motion. Congruence. Translation, symmetry, and rotation in a plane and in space. Planes of polygons and their characteristics. The prism and pyramid. The circle. Principle geometrical designs.

Equivalence and the discussion of linear equations and systems. Inequalities. Identical polynomials and methods of indeterminate coefficients.

Geometrical figures by methods of translation, symmetry, and geometrical positions.

Raising numbers by zero and by a whole negative power. Operations with quadratic equations. Operations with quadratic roots. The concept of the irrational number. The concept of an imaginary number. Quadratic equations with one unknown. Polynomials of the second degree with one variable. Approximate values.

Measurement of length. Similarity and homothety in a plane and in space. The circumference of a circle. The Pythagorean Theorem. Rotating bodies.

Trigonometric functions of a general angle. Basic trigonometric similarities. Natural values of trigonometric functions. The solution of a right-angle triangle.

The numerical plane and operations with complex numbers. Quadratic equations. Biquadratic and binomial equations. Errors in the results of basic operations.

Harmonic points on a line. The algebraic method of solving construction problems. Conical surfaces. Conical cross-sections. The elements of descriptive geometry.

Exponential function. Logarithms and logarithmic function. Systems of quadratic equations with two unknowns. Functions defined by equations of the form  $AX^2 + BY^2 = c$  and their graphs. Definitions of an ellipse, hyperbola, and parabola.

The surfaces of plane geometrical figures. The volume of conical bodies. The surfaces and volume of spherical bodies. Projection of vectors on an axis. Generalization of the concept of the angle and the definition of trigonometric functions. Periodicity. Reducing to functions of acute angles. Graphs of trigonometric functions.

Raising of a number of a rational integral power. Operations with roots. Equations of a straight line and a circle. Transformations of the coordinate system. Formation of equations of geometrical positions. Graphic solution of equations of the third and fourth systems.

The size of a rotating surface. The cubic capacity of a rotating body. Designs of conical cross-sections. The axiomatic structure of geometry. The concept of cyclometric functions.

Arithmetic and geometric series and progression. Complex percentage calculations. The limiting value of a function. The concept of the derivative of a function, a primitive function, and a definite integral. Fundamental concepts of calculations of probability.

The theorem of the projection of a composite of vectors. Trigonometric functions of the sum and of the difference of two angles. Functions of duplicated angles. The solution of simple trigonometric equations. The solution of an oblique triangle.

A survey of real numbers. The principle of the permanency of laws of computing operations. The principle of mathematical induction. The fundamentals of combination. Numerical series and its limiting value. A survey of elementary functions. Derivatives and integrals of the simpler algebraic rational functions. Tangents of curved lines of the second degree. Further study of the irrational number and its rational approximate values.

Trigonometric transformations. Logarithms of trigonometric functions. The solution of trigonometric equations and unbalanced equations.

## Descriptive Geometry

The function of instruction in descriptive geometry is:

to develop among the pupils conceptions of space,

to offer them the elements of the graphic presentation of objects and their relative positions, and

to develop the capability of the pupils for the standard presentation of simple objects.

## Elements of the Programs

Projecting, projections, and types of projection.

Vertical projection on one plane. Projection of a point, a line, and length. The slope of a straight line and of length, the true magnitude of the angle of incidence of a line, and the true length of a straight line. Projections of a right angle. Projections of two straight lines. Special positions of straight lines with reference to the plane of projection.

Vertical projection on two planes which are right angles to each other. Projections of a point, straight line, and length in general and in special positions. The true magnitude of the angle of incidence of a line and the true length of a straight line. Projection in three planes. Projections of regular figures and circles parallel to the planes of projection. Projections of a prism, pyramid, cylinder, and cone with the bases in the planes of projection. Projections of a sphere and of simpler objects. Development of the surfaces of prisms, pyramids, cones, and spheres.

Presentation of planes with the help of tracings. General and special positions of a plane with reference to the planes of projection. The point and the line in a plane. A plane determined by three points. A line and a point in such a plane. The intersection of two planes and the passage of a line through a plane.

Rotation on axes perpendicular to the planes of projection. The true magnitude of length by means of rotation. Descent of planes perpendicular to the plane of projection in the plane of projection. The construction of regular figures and circles in such planes.

Lines perpendicular to a plane. The distance of a point from a plane and the true magnitude of the distance. Projections of regular rectilinear prisms, pyramids, cylinders, and cones, in the planes of the bases perpendicular to the plane of projection.

Intersections of prisms, pyramids, cylinders, and spheres with planes perpendicular and parallel to the planes of projection and the true magnitude of these intersections. The circle, ellipse, hyperbola, and parabola as intersections of a cone with planes. The development of the surfaces of intersected bodies together with the intersecting line.

Oblique projection. Oblique projection of a point, line, plane, geometric figure, and bodies, and other objects in the simplest positions.

## Technical Education

The function of technical education is:

- to give the pupils a basic understanding of technology,
- to acquaint the pupils with the basic branches of production and with the role of technology in the development of production forces and social relations,
- to introduce the pupils to the process of production through the practical use of the tools of labor and the means of labor and to enable them in this way to develop working and production habits,
- to acquaint the pupils with the fundamental principles of scientific organization of work and thus to enable them to understand the place and role of man as an active factor in production, and
- to accustom the pupils to systematical and methodical work, to the proper organization of operations, and to the efficient use of tools, materials, working time, and the work force.

In carrying out the tasks of technical education, the subjects of the natural sciences represent the foundation from which to begin. The selection of material and the organization of instruction in the natural sciences should be arranged so that the pupils can acquire an active knowledge through various forms and methods of the instruction process. By means of laboratory and practical work the pupils should be enabled to apply basic laws and scientific principles in daily life and practice.

The tasks of technical education (such as enabling the pupils to make use of technical drawings, tools, instruments for measurement and machinery, acquainting them with the basic branches of production and the processes used in them, and guiding the pupils toward active work in production based on scientific principles, etc.) will be achieved most completely by means of the participation of the pupils in production work, in industrial and agricultural enterprises, and in youth work drives.

Various forms of production work of the pupils offer a wealth of concrete material which makes it easier to assimilate and deepen theoretical knowledge in the various fields of science. Among other things, the organization of the work process should be such as to contribute to the socio-economic education of the pupils. Through such an approach to the problems of technical education the danger will be avoided of conducting the technical education of the pupils in a verbal way without



practical work or of performing practical work without a technical education, this work being transformed into mechanical activity - manualism. In this way, by achieving a unity of intellectual and physical work, technical education will contribute to the work training of the youth and to the joining of theory with practice.

In the final classes, the pupils should consider more broadly the range of problems of our production which rest on a specific level of production technology. In this connection it is very important to closely coordinate instruction so that the pupils might be enabled to acquire a rounded general-social economic education.

Each school prepares a program of seminars and practical production tasks in accordance with the conditions in its area and with the possibilities for including the pupils in the work of enterprises, agricultural cooperatives, and the economy and local or general youth work drives. Where conditions permit the practical work of the pupils may be organized in the form of mandatory practice during vacations or by the inclusion of pupils in production work during the school year. In both cases we dare not neglect the theoretical preparation of pupils for production work, because through it an understanding is assured of production processes in which the pupils participate as well as of the techniques which they use.

In connection with the realization of the functions of general technical education of the pupils it is necessary to begin with the conditions in which the school finds itself and with the economic characteristics of the surroundings. However, instruction in all schools should include the acquaintance of the pupils with the basic branches of production, with the elementary questions of the economy of labor, with the knowledge of machinery, and with the use of the most varied types of tools and with simple machinery.

## Physical Training

### Functions of Physical Training

Physical training in the secondary school is an inseparable part of general education. It should serve to improve the health of the pupils and to develop more comprehensively and fully their creative powers and capabilities. At the same time it should be a corrective which will operate against one-sidedness and the unfavorable influences which school work, the mechanization of production, and urbanization exert on the organism of the young man.

Therefore, the secondary school should:

help the pupil to preserve a positive relationship to physical culture and to develop a lasting interest in the need for active participation in this area,

further develop and consolidate among the pupils habits of daily, systematic care of the body, the development and maintenance of physical conditions, and the use of physical culture for healthful and cultural leisure activity.

expand and deepen the physical education which the pupils have acquired in the elementary school and enable them to master as completely as possible those branches of physical exercise (sports) for which they show special inclinations,

introduce the pupils to spare-time activity in selected branches of physical exercise (sports) and develop an interest in sports activity, and

by means of physical training to awaken in the pupils a desire and need for accommodating personal and social interests to the principles of socialist humanism.

#### Plan for the Fulfillment of the Assigned Tasks

In all four classes hours of physical exercise should be provided for the basic program and for those branches of physical exercise which the pupils select. Besides this, the secondary school should develop competitions, various forms of spare-time activity, outings, winter and summer camping, and pupils' associations for physical culture. Within the scope of the hours of mandatory instruction the pupils should be offered the possibility in accordance with their own interests to deepen their knowledge and skill in those branches of physical exercise which they themselves have selected. For this purpose, the secondary school will, within the limits of possibilities, organize special courses in athletics, Swedish gymnastics, swimming, skiing, volleyball, basketball, soccer, dances, and wrestling with the provision that up to 50 percent of the mandatory hours of instruction may be used for elective instruction.

#### Principles of the Program for the First 2 Years

For the balanced development and growth of the organism it is necessary to make use of activities which contain running and exercises on gymnastic apparatus. Particular attention should be devoted to strengthening of the back muscles and to the proper formation of the spine and shoulder areas. Special attention should be given to strengthening the muscles of the pelvis in the case of female pupils.

Body-building exercises should be used for developing optimum mobility of the body and assuring the solidity and elasticity of the joints and the conditioning, normal length, and tone of the muscles. Running in fresh air, games, swimming, skiing, mountain-climbing, and the like have a more decisive effect in strengthening the functions of the heart and lungs. While maximum achievement should be sought in exercises, extreme efforts should not be demanded in exercises requiring strength and endurance.

Through the broadening and deepening of physical education it is necessary to perfect the coordination of movement and to refine general motor skills. While developing the most efficient individual technique of movement, full attention should be devoted to the economical use of energy. The pupils should be systematically acquainted with the value of individual body exercises and with the possibilities for their application in life.

In the process of bodily exercise one should systematically seek possibilities for the most comprehensive development possible of the free person who consciously perceives his social obligations. Of special importance for this purpose are games with complex organization and functions and those branches of bodily exercise with complex organization and functions and those branches of bodily exercise which require collective solution of tasks. Special attention should be devoted to training sportsmen of a type such as will know how to actively participate in the building of socialism.

#### Principles of the Program for the Last 2 Years

The physical capabilities of the pupils should be further developed and the organism should be systematically prepared for increased exertions, however, in connection with this, one should strive to provide and preserve a balance in the development and functioning of the individual organic systems. Attention should be given to the development of the muscles surrounding the chest cavity. The muscles of the trunk and hands should be strengthened by means of exercises on gymnastic apparatus, body-building exercises with bar-bells and medicine balls, jumping rope, and games. The strengthening and functional conditioning of the cardio-vascular system for increased efforts and especially for stamina are to be achieved by running average distances, swimming, skiing, and rowing. Among the pupils positive conceptions should be formed of the need for physical culture and its place in the life of the working man. The pupil should leave the school capable of independently selecting bodily exercises which will be of service to him in maintaining physical condition and fortifying the organism, and he must be capable himself of checking on the functional capabilities and health of his own organism.

It is necessary to perfect and consolidate the personal technique of movement of the pupil and to acquaint him with the tactics which are necessary for competitions in athletics, exercises on gymnastic apparatus, necessary for competitions in athletics, exercises on gymnastic apparatus, swimming, skiing, and games. The pupil should fully master the technique of a branch of bodily exercise (a sport) which he himself has chosen.

The pupils should be enabled to independently organize hours of leisure and to select activities for daily, weekly, and annual rest.

The pupils should be acquainted with the critical evaluation of the results achieved by them, and among them the type of sportsmen should be developed who know how to accommodate their own sports interests with general social interests. They should be prepared for independent administration in the school organizations for physical culture and for work as instructors in the branches of sports they have selected.

No 226/1  
12 June 1959  
Belgrade

Chairman of The Educational  
Council of Yugoslavia  
/Signature/ Rodoljub Calakovic

# WORK PLAN OF THE SCHOOL

## Instructional Plan

### I. Social-Linguistic Course of Study

	Classes			
	<u>I.</u>	<u>II.</u>	<u>III.</u>	<u>IV.</u>
Native language and literature	4	4	4	4
A.				
History	3	3	3	3
Sociology with the principles of political economy	--	--	2	3
Social order of Yugoslavia	2	1	--	--
Logic and psychology	--	--	2	--
Philosophy	--	--	--	3
Art	2	1	1	2
Foreign language*	3	4	4	5
Latin	2	2	--	--
B.				
Geography	3	2	--	2
Biology	2	2	2	--
Chemistry	--	2	2	--
Physics	2	2	2	--
Mathematics	4	3	2	2
Technical instruction	1	2	2	2
Pre-military training	--	--	2	2
	28	28	28	28

Physical Education	3	3	3	3
Total	31	31	31	31

## II. Natural-Mathematics Course of Study

	Classes			
	<u>I.</u>	<u>II.</u>	<u>III.</u>	<u>IV.</u>
Native language and literature	4	3	3	3
A.				
Mathematics	4	4	4	5
Physics	2	3	3	3
Chemistry	--	2	3	2
Biology	2	2	2	2
Descriptive geometry	--	2	2	2
Technical instruction	1	1	2	2
B.				
Geography	3	2	--	2
History	3	2	2	--
Sociology with the principles of political economy	--	--	--	2
Social order of Yugoslavia	2	1	--	--
Logic and psychology	--	--	2	--
Philosophy	--	--	--	1
Art	2	1	--	--
Foreign language	3	3	3	2
Latin	--	--	--	--
Preliminary training	2	2	2	2
	28	28	28	28

Physical education

3      3      3      3

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Total

31      31      31      31

\* The school should also make possible the optional study of still another foreign language for pupils who desire it.

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Germany

BACKGROUND, FACILITIES, PROGRAM, AND ENTRANCE REQUIREMENTS OF ENGINEERING

SCHOOL FOR AIRCRAFT CONSTRUCTION IN DRESDEN, EAST GERMANY

Deutsche Flugtechnik

Engineer Willy Schulz, Dresden

/German Aviation Technology/

No 12, December 1959, Dresden

Pages 369-370

German, no per

CSO: 3375-D

If we leaf through the history of the Dresden Aircraft Construction Engineering School, we can discern several, very different phases.

In 1861, the Dresden Trades Association founded a Craftmen's School for Tradesmen with Completed Trade Training, which was later renamed "Trade School."

On 1 April 1896, the city of Dresden took over the Trade School; the construction of a school building on the lot of the present-day for Aircraft Construction Engineering School was begun in 1899. This building was completely destroyed by the Anglo-American terror bombing raid of 13 February 1945 (Figure 1).

The work of the school suffered heavily due to World War I. Instructors were drafted into the service and the number of students dropped heavily.

Starting in 1922, the school buildings served for various school purposes; they were also used as a technical high school.

In 1926, the school was renamed "Technical Training Institutions of the City of Dresden."

In 1928, the "Higher Machine-building School," with a five-semester course, was set up under the Technical Training Institutions.

After the liberation from the fascist yoke, responsible persons turned up immediately at the Technical Training Institutions and began to work hard for a new and better future.

On 2 October 1945, education was resumed at the Dresden Technical Training Institutions.



In 1952, the Technical Training Institutions were renamed "Technical School for Machine-building and Electrotechnology" and in 1953 it was renamed "Technical School for Heavy Machine-building Electrotechnology, and Precision Mechanics."

With the buildup of the aviation industry in the German Democratic Republic, it became necessary to equip a training institution for the medium-level cadres of this industry branch.

Because of its geographic location and good equipment, as well as the available teaching personnel, the Engineering School for Heavy Machine-building, Electrotechnology, and Precision Mechanics is in a good position to accomplish this new task. Since 1 September 1955, the total capacity of the school is being used for the training of aircraft construction engineers.

About 66% of the students at the Aircraft Construction Engineering School come from worker and peasant families.

Never before have we in Germany seen such a magnificent support effort for the studying youth as we have it today in the worker-and-peasant state. Today, the German Democratic Republic has 300 technical schools, 30 universities and colleges, five academies, and 10 college-level institutes.

In 1958, the number of technical school students -- not including the special schools for teacher and educator training -- was about 95,000, including 21,000 coeds. Since 1957, all technical school students taking fulltime courses have been exempted from tuition fees.

In 1958, there were roughly 83,000 students in the colleges. Almost all students are getting scholarships amounting to an average of 150 DM per month. All students are insured free of charge.

The history of the Aircraft Construction Engineering School tells us that, for instance, around 1900, a total of 2,400 DM worth of scholarships was paid out per year; this money came from donations of former students and from the funds of the Trades Association and the city of Dresden. Thus, the old time Trade School was a good step ahead of many other schools. Of course, there was an obligatory tuition fee.

Today, with an approximately equal number of students, roughly 1 million DM are paid out in scholarships at the Aircraft Construction Engineering School.

Our government allocates more than 5,000 DM per year per student for education purposes.

In West Germany only 91.% of the college students in 1956-1957 were granted tuition exemption and only 10.6% were granted partial tuition exemption. And since the scholarship payments are small, worker and peasant children cannot attend college.

These figures clearly prove the great interest of our worker-and-peasant state in the training and education of a progressive intelligentsia.

In recent years, the Aircraft Construction Engineering School added a heating plant, a school building with the most modern equipment, a movie theater with 250 seats, and a boarding school (Figure 2) for 350 students; the latter building has beautiful club rooms, sanitary facilities, cheerful dormitory rooms, and a very well equipped dispensary.

The Aircraft Construction Engineering School is among the best-equipped schools in the German Democratic Republic. Foreign visitors again and again confirmed that the equipment of the school is far above average (see also Deutsche Flugtechnik, No 1, 1957).

In 1958, in addition to class rooms with 30 seats each, four modern lecture halls with 90 seats each and three drafting halls with 30 drafting machines each, plus the following other laboratories, were added: aircraft equipment laboratory, regulator technology laboratory, hydraulics laboratory, engine laboratory with four engine test stands, fuel injection pump test stand, calorimetry stations, and other facilities. We also have an airflow laboratory with a small wind tunnel and a tripple-component scale and a wind tunnel with a 100-hp output, smoke tunnel, and smaller demonstration and experimental installations (Figure 3).

In addition, the school has well-equipped machine shop and a shop for the soaring [sail plane] soaring groups.

Of course, the school has its own photocopy plant, a large library, and a modern school radio station.

Instruction is offered in fulltime day or evening courses in the following fields:

(a) engine construction, (b) cell construction, (c) equipment construction (mechanical and electrical equipment), (d) technology of aircraft construction. The graduates in fields (a) to (c) are employed primarily in construction design and at the test stands, while the graduates of field (d) are used as technologists, plant engineers, in production management, technical testing, and other jobs. In keeping with the requirements of industry, most engineers are being trained as technologists.

The fulltime course takes 3 years, with an average of 35 class hours per week; the evening course takes 6 years at 12 hours per week, which is increased to 14 hours per week during the last 2 years. On-the-job training facilities are available for evening study at the aircraft industry installations in Karl-Mar-Stadt, Schkeuditz, and Ludwigsfelde. For VEB Flugzeugwerke Dresden /Dresden People-owned Aircraft Plant/ and for VEB Entwicklungsbau Pirna /Pirna People-owned Development Station/, the engineers taking evening courses are being trained in the class rooms of the Aircraft Construction Engineering School in Dresden. In addition to engineering evening courses, there are also foreman evening courses lasting 2 years. These courses are also being given by the Aircraft Construction Engineering School and in the previously mentioned on-the-job training facilities, as well as at the Pirna station of the VEB Entwicklungsbau Pirna.

During the first two-thirds of the engineering courses, the students get a thorough instruction in the general and technical basic subjects, while the last third of the course is used for special training in the selected field of specialization. The basic training is approximately the same for all fields of specialization. During the entire course, each student, insofar as his health permits, gets training in soaring (Figure 4). Mid-course examinations are given after the first and second study years in fulltime, on-campus study and after the second and fourth study years in evening courses. The fulltime students take part in a 4-week on-the-job training project after the first and second study years. At the end of the course, there is an engineer examination consisting of a written and an oral part and a major homework assignment project.

The new building on Duerer Street helped give the school a greater capacity which is being increased further through the remodeling of the building on Elisen Street. This makes it possible, in addition to aircraft construction, to handle also fields of specialization in other industry branches.

Fulltime precision mechanics courses are to start in September 1960 and fulltime electrotechnology courses are to commence in 1961.

What Are the Requirements for Applicants Seeking Admission to the Aircraft Construction Engineering School?

For fulltime, on-campus study, the minimum age is 17 and the maximum age should not exceed 30 years. The applicant must have passed the skilled worker examination in a metalworking trade. Several years of employment in a skilled job in the metal industry are desirable.

Preference is given to applicants from the aviation industry, former members of the National People's Army, and applicants with longer job experience. In the school admission procedure, the performance of the applicant in the entrance examination and his technical and social work in the enterprises are of course also of the utmost importance. Further information as to admission requirements can be obtained from the cadre division of the enterprises.

In contrast to fulltime study, applicants are also being accepted for evening courses on 1 February of each year. The applications must be received by 31 August of the preceding year.

The technical schools have the mission of educating socialist individuals, to steel them physically, and to impart to them a high degree of knowledge, capabilities, and skills, which will enable them to accomplish the great task of peaceful construction. They educate the youth in the spirit of friendship between peoples and make patriots out of them who will defend their homeland and the democratic achievements of our worker-and-peasant state.

All in all, we can state at this point that the Aircraft Construction Engineering school is making a great effort to accomplish this task. The school attained nice successes but much remains to be done in order to attain the education and training objectives of the socialist technical schools to the fullest extent. The members of the Aircraft Construction Engineering School will continue to exert every effort in the future and will contribute to the further strengthening of the first German worker-and-peasant state through their successful work.

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